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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,753	06/24/2005	Morio Nishigaki	2005-1041A	2105

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EXAMINER	
CWERN, JONATHAN	
ART UNIT	PAPER NUMBER
3737	
MAIL DATE	DELIVERY MODE
02/13/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,753	NISHIGAKI, MORIO	
	Examiner	Art Unit	
	Jonathan G. Cwern	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al. (US 2003/0092994).

The independent claims recite: "wherein, when the parallel reception is being performed". This language is directed towards the intended use of the apparatus and thus all the language following this statement is not given patentable weight. Therefore the only limitations of the claims given patentable weight are the controller and an array of elements. The following analysis assumes that all parts of the claims are given patentable weight in order to expedite prosecution, however as the language is currently written *only the controller and array of elements are given patentable weight*.

Miller et al. show an ultrasonic diagnostic equipment which performs parallel reception ([0083]-[0087]), wherein when the parallel reception is performed with sector scanning ([0098]) using an array element, a movement track of focus points in reception dynamic focusing is moved in the slanting straight line direction with respect to the transmission direction in relation to transmission focus positions so that a composite beam of a received beam and a transmitted beam is substantially shaped as a straight line at least in areas having shallower depths than the focus position of the transmitted

beam (delay and gain control are used to steer and dynamically focus beams, dynamic focusing involving focusing the beams in straight lines, and so the focus points are moved and the beams are straightened, [0083]-[0087], straight lines also visible in Figure 4). Miller also shows delay control ([0083]-[0087]); gain control ([0083]-[0087]); and use of a two-dimensional array ([0083]-[0087]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 2003/0092994) in view of Banta, Jr. et al. (US 6055861).

Miller et al. show an ultrasonic diagnostic equipment which performs parallel reception ([0083]-[0087]), wherein when the parallel reception is performed with sector scanning ([0098]) using an array element, a movement track of focus points in reception dynamic focusing is moved in the slanting straight line direction with respect to the transmission direction in relation to transmission focus positions so that a composite beam of a received beam and a transmitted beam is substantially shaped as a straight line at least in areas having shallower depths than the focus position of the transmitted beam (delay and gain control are used to steer and dynamically focus beams, dynamic

focusing involving focusing the beams in straight lines, and so the focus points are moved and the beams are straightened, [0083]-[0087], straight lines also visible in Figure 4). Miller also shows delay control ([0083]-[0087]); gain control ([0083]-[0087]); and use of a two-dimensional array ([0083]-[0087]).

Banta et al. disclose methods and apparatus for ultrasound imaging using combined scan patterns. Banta et al. teach performing linear scanning and sector scanning (column 4, lines 35-45).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have performed linear scanning as well as sector scanning as taught by Banta et al., in the device of Miller et al., with the motivation that linear scanning will generally produce a higher quality image than a sector scan. Both types of scans have their advantages, and so using both would provide the operator with more information for diagnosis.

Response to Arguments

Applicant's arguments filed 1/2/08 have been fully considered but they are not persuasive.

The independent claims recite: "wherein, when the parallel reception is being performed". This language is directed towards the intended use of the apparatus and thus all the language following this statement is not given patentable weight. Therefore the only limitations of the claims given patentable weight are the controller and an array of elements. The above analysis assumes that all parts of the claims are given

patentable weight in order to expedite prosecution, however as the language is currently written *only the controller and array of elements are given patentable weight*.

In regards to applicant's argument that Miller et al. do not show a composite beam of a received beam and a transmitted beam is substantially shaped as a straight line, examiner respectfully disagrees. In parallel reception, by controlling the steering and focusing of the synthesized received beams, the "composite beam" is also adjusted. By steering and focusing the beams, any type of "composite beam" can be formed.

For example, Clark (US 59776089) is incorporated by reference by Miller et al. Clark explains that by steering the receive lines, the "round-trip beam" (another name for composite beam) can achieve a desired orientation (column 6, lines 42-60). As illustrated in Figures 4a and 4b, the composite beams ($31_{1\text{-}4}$) can be straight lines.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hunt et al. (US 5462057) disclose an ultrasound system using parallel reception. Hunt et al. recognize problems with image artifacts, and compensate for the warping of the "round trip scan lines" (composite beams).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Cwern whose telephone number is (571)270-1560. The examiner can normally be reached on Monday through Friday 9:30AM - 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. G. C./
Examiner, Art Unit 3737

/Ruth S. Smith/
Primary Examiner, Art Unit 3737